

**MATERIAL SAFETY DATA SHEET****CALCIUM HYDROXIDE**

PRODUCT CODE NUMBER(S): 2560-1, 2560-4, 2560-6

**PRODUCT IDENTIFICATION****Chemical Name and Synonyms:** *Calcium hydroxide; Calcium hydrate; Caustic lime; Slaked lime; Lime water***Chemical Family:** *Alkaline earth hydroxide***Chemical Formula:**  $\text{Ca}(\text{OH})_2$ **Product Use:** *Laboratory reagent***Manufacturer's Name and Address:***Caledon Laboratories Ltd.**40 Armstrong Avenue**Georgetown, Ontario L7G 4R9***Telephone No:** (905) 877-0101**Fax No:** (905) 877-6666**Emergency Telephone No:** CANUTEC (613) 996-6666**HAZARDOUS INGREDIENTS OF MATERIALS**

<i>Ingredients</i>	<i>%</i>	<i>TLV Units</i>	<i>CAS No.</i>
<i>Calcium hydroxide</i>	<i>15-95</i>	<i>5 mg/m<sup>3</sup></i>	<i>1305-62-0</i>

**PHYSICAL DATA****Physical State:** *Solid***Odour and Appearance:** *Soft, white or grayish-white solid OR clear, colourless solution; odourless***Odour Threshold (ppm):** *Not applicable***Vapour Pressure (mm Hg):** *Zero, does not form vapour***Vapour Density (Air = 1):** *Not applicable***Evaporation Rate:** *Not volatile***Boiling Point (degrees C):** *Decomposes at 580°C before boiling***Melting Point (degrees C):** *580°C (loses water and forms CaO)***pH:** *11.3 (0.01%, 25°C)***Specific Gravity:** *2.24 at 20°C***Coefficient of Water/Oil distribution:** *Not available***SHIPPING DESCRIPTION****UN:** *Not regulated***T.D.G. Class:** *Not regulated***Pkg. Group:** *Not regulated***REACTIVITY DATA****Chemical Stability:** *Normally stable; solid readily absorbs CO<sub>2</sub> from air forming CaCO<sub>3</sub>***Incompatibility with other substances:** *May react violently with strong acids. May react explosively with maleic anhydride. May react with nitro organic compounds to form explosive salts. Reacts with phosphorus to form phosphines which may ignite spontaneously in air. Corrosive to aluminum; not corrosive to certain grades of stainless steel (302, 304, 316, 410, 430) at room temperature.***Reactivity:** *Avoid elevated temperatures, incompatible materials, generation of dust.***Hazardous Decomposition Products:** *CaO, CaCO<sub>3</sub>***FIRE AND EXPLOSION DATA****Flammability:** *Not combustible. Calcium hydroxide will not burn or support combustion..***Extinguishing Media:** *Use any means suitable for surrounding fire. Use flooding quantities of water as spray to cool containers, knock down smoke or vapours, to absorb heat. Do not use carbon dioxide or halogenated extinguishing agents. Fight fire from a safe distance, from upwind. Firefighters must wear protective equipment and clothing (encapsulating chemical resistant suit) sufficient to prevent inhalation of fumes or vapours and contact with skin and eyes. Bunker gear will not be adequate. Closed containers may rupture violently during fire; withdraw immediately in case of rising sound from vent or discoloration of container.***Flash Point (Method Used):** *Does not burn***Autoignition Temperature:** *Not applicable***Upper Flammable Limit (% by volume):** *Not applicable***Lower Flammable Limit (% by volume):** *Not applicable***Hazardous Combustion Products:** *Toxic and irritating fumes of CaO***Sensitivity to Impact:** *None***Sensitivity to Static discharge:** *None***TOXICOLOGICAL PROPERTIES AND HEALTH DATA****Toxicological Data:****LD<sub>50</sub>:** *(oral, rat) 7,340 mg/kg***LC<sub>50</sub>:** *Not available***Effects of Acute Exposure to Product:****Inhaled:** *Irritating. Can cause severe irritation of the nose, throat and lungs. Solid causes coughing and sneezing which helps to limit the damage. Severe overexposure may cause spasm, inflammation and edema of the larynx and bronchi, chemical pneumonitis and pulmonary edema, even death. Symptoms of pulmonary edema, shortness of breath, cyanosis, chest pain, may not be evident until 24-72 hours after exposure.***In contact with skin:** *Irritating. Can cause inflammation, but no immediate pain, so exposure is allowed to continue, causing severe burns. A powerful caustic to living tissue. Severity depends on the concentration and duration of exposure. May cause skin sensitization, which becomes evident upon re-exposure. May be harmful if absorbed through the skin.***In contact with eyes:** *Corrosive solid or solution. Solid reacts with moisture and protein in the eye to form clumps of moist compound which are difficult to remove. Irritation can continue for some time and the cornea can become severely burned. Can cause permanent injury and even blindness.*

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Severity of damage depends on the concentration and duration of exposure.

**Ingested:** Low oral toxicity. However, it is corrosive, and will cause burning and corrosion of the mouth, throat and esophagus, vomiting and diarrhea, and stomach cramps, possible shock and collapse.

**Effects of Chronic Exposure to Product:**

There are no documented effects due to long-term exposure to calcium hydroxide but extensive skin contact may cause dermatitis.

**Carcinogenicity:** No human or animal information available

**Teratogenicity:** No human or animal information available

**Reproductive Effects:** No human or animal information available

**Mutagenicity:** No information available

**Synergistic Products:** None known

## PREVENTIVE MEASURES

**Engineering Controls:** Local, corrosion-proof, exhaust ventilation required.

**Respiratory Protection:** Dust masks. Fumehood. Up to 10 mg/m<sup>3</sup>, NIOSH/MSHA approved dust and mist respirator. Up to 20 mg/m<sup>3</sup>, supplied-air respirator. Up to 25 mg/m<sup>3</sup>, supplied-air respirator operated in continuous-flow mode, or powered air-purifying respirator with high efficiency particulate cartridge, or full-facepiece respirator with high efficiency particulate filter, or full-facepiece self-contained breathing apparatus, or full-facepiece supplied-air respirator. For emergency or unknown concentrations, positive pressure, full-facepiece self-contained breathing apparatus.

**Eye Protection:** Chemical safety goggles, face shield.

**Skin Protection:** Natural rubber, neoprene, or nitrile rubber gloves and other, clean, resistant, body-covering clothing.

**Other Personal Protective Equipment:** Safety shower and eye-wash fountain in work area.

**Leak and Spill Procedure:** Evacuate and ventilate area. Cleanup personnel must be thoroughly trained in the handling of hazardous materials, and must wear protective equipment and clothing sufficient to prevent inhalation and contact with skin, eyes, and clothing. Do not touch spilled material. Gather carefully in a manner that does not generate dust. Collect solids in container for disposal. Keep material from entering sewers or waterways. Neutralize final traces carefully with acetic or hydrochloric acid (may generate heat and fumes). Wash area of spill thoroughly with copious amounts of water.

**Waste Disposal:** Dispose of in compliance with local, provincial and federal regulations.

**Handling Procedures and Equipment:** CORROSIVE. Workers using this material must be thoroughly trained in its hazards and its safe use, and must wear appropriate protective equipment and clothing. Avoid generating dust or mist. Avoid skin or eye contact. Use the smallest amount possible for the purpose, in designated areas with adequate ventilation. Use good housekeeping practices to limit dust and keep work area free of extraneous materials. Use corrosion-resistant equipment and containers. When diluting, always add corrosive to water, not water to corrosive. Add cold water slowly, stirring constantly. Keep containers tightly closed when not in use and when empty. Empty containers may contain hazardous residues; treat with caution.

**Storage Requirements:** Store in water-tight, labelled containers in a cool, dry well-ventilated place separate from the

normal work area. Keep containers tightly closed and away from incompatible materials. Protect from damage and inspect frequently for signs of leaking or corrosion. Storage area shelving, floors, lighting and ventilation systems should be made of materials resistant to corrosion.

## FIRST AID MEASURES

### Specific Measures:

**Eyes:** Blot or brush away excess material and immediately flush eyes thoroughly with large quantities of gently running water for at least thirty (30) minutes, holding eyelids open while flushing. Take care not to flush contaminated water into unaffected eye. Wear gloves to avoid contact with this chemical. Get medical attention immediately.

**Skin:** Remove contaminated clothing (including watches, rings, belts and shoes). Flush skin with plenty of running water for at least thirty (30) minutes. Wear gloves to avoid contact with this chemical. DO NOT INTERRUPT FLUSHING. Get medical attention immediately.

**Inhalation:** Remove to fresh air. Give oxygen and get medical attention immediately for any breathing difficulty. If exposure is severe, and there is risk of pulmonary edema, monitor victim for 24-72 hours; symptoms can develop after this length of time.

**Ingestion:** If victim is alert and NOT convulsing, rinse mouth thoroughly with water, and give 2 to 4 glasses of water or milk to drink to dilute. Do not induce vomiting. If spontaneous vomiting occurs, rinse mouth and give more water or milk to drink. Get medical attention immediately.

## REFERENCES USED

CCINFO disc: Cheminfo, March 2007

Budavari: The Merck Index, 12th ed., 1997

Sax, Lewis: Hawley's Condensed Chemical Dictionary, 11th ed., 1987

Sax: Dangerous Properties of Industrial Materials, 5th ed., 1979

Suppliers' Material Safety Data Sheets

## ADDITIONAL INFORMATION

**Date Issued:** February 20, 1990

**Revision:** March 2010

**MSDS:** 2560-1, 2560-4, 2560-6

**Proposed WHMIS Designation:** E

Prepared by: Caledon Laboratories Ltd. (905) 877-0101  
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